

MEET YOUR COTTON RESEARCHER

Chi Nguyen, Technical Officer Pathology
NSW Department of Primary Industries

PROFILE

MAY 2024

RESEARCH AREA

Disease

CRDC Research Project
Characterisation and management of Alternaria leaf spot and black root rot pathogens of cotton in NSW



WHAT'S YOUR BACKGROUND?

Originally hailing from Vietnam, my roots lie in farming, predominantly in orchards. In 2007, I embarked on an academic journey, earning a degree in Crop Sciences from Can Tho University nestled in the Mekong Delta.

My Australian venture commenced in 2010 upon arriving in Armidale for a Master of Science in Agriculture at the University of New England. This pursuit culminated in the attainment of a PhD in Plant Pathology in 2023.

HOW DID YOU END UP IN COTTON RESEARCH?

Throughout my PhD, my focus was primarily on biological weed control, yet I also delved into studying diseases isolated from cotton fields. Upon the opportunity arising for a Cotton Pathology position at the NSW Department of Primary Industries in Narrabri, I seized it, despite my limited prior knowledge of cotton.

My background in working with diseases in citrus during my undergraduate studies, coupled with over a decade of experience in biological control of rice disease and insect's pests, provided a solid foundation.

Leveraging my research skills and expertise in rice and citrus pathologies, as well as weeds, I have successfully integrated myself into cotton research since June 2021.



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WHAT EXCITES YOU ABOUT WORKING IN THE COTTON INDUSTRY?

Being part of the cotton industry provides me with a diverse experience, encompassing learning, research, and direct interaction with growers and consultants.

Working within the pathology team has not only allowed me to feel valued and comfortable but has also opened up opportunities for me to travel to new and unexplored places.

WHAT DOES YOUR CURRENT PROJECT WORK INVOLVE?

The ongoing project is structured around three primary components: surveillance, pathogen characterisation, and management. Through our annual disease surveillance, we closely monitor the presence, severity, and progression of seedling diseases and those affecting mature cotton plants later in the season. This surveillance is vital for the early detection and prevention of new and exotic diseases, particularly considering recent biosecurity challenges in Australia.

Pathogen identification and characterization are integral parts of our diagnostic service, involving isolation, morphological and molecular identification, and pathogenicity assessments. This allows us to promptly identify any potential occurrence of new or exotic strains/pathogens and deepen our understanding of their biology, diversity, and evolution. In recent seasons, several new (non-exotic) pathogens, including *Colletotrichum*, *Eutypella*, and *Stemphylium*, have been detected and identified in NSW.

Our current focus for management revolves around *Alternaria* leaf spot and black root rot. Management of *Alternaria* leaf spot currently relies on Tebuconazole, operated under permit. However, we've evaluated multiple alternative chemistries that have shown high efficacy against *Alternaria* while being safe for cotton, thus holding potential for registration.

Conversely, black root rot, a soilborne disease, poses a more significant challenge, necessitating ongoing efforts to deepen our understanding of the pathogen, the disease, and effective management strategies.

WHAT DO YOU LIKE TO DO WHEN YOU'RE NOT RESEARCHING?

You'll find me gardening or playing with my kids.

For further information:

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